

Discussant Feedback:

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WE'RE DRAGGING OUR FEET-FOCUS IS WRONG

Health Departments listing additives

Or

asking what are ingredients

Only half the question*. Should be asking...

What comes OUT of it???

Focus on emissions is basis for control

*** Except for Massachusetts, BC**



DAVID Davies. Philip Morris Europe. BBC interview

"...And we believe that marketing practises for the industry as a whole must be regulated in every country in the world, and let's get the rules defined, let's make sure that everybody is subject to those rules and let's make sure enforcement of the rules is strong, fair and equitable."



PHILIP MORRIS SUBMISSION TO CONGRESS

"...Any new regulatory framework should authorize FDA to continue to address the broad issues of disclosure -- the text of warning labels, information about ingredients and smoke constituents, etc."

"... Regulation should define reduced risk products ..."

"direct FDA to research important tobacco issues -- such as whether and to what degree lower-tar cigarettes or new products may result in any reduced risk of smoking-related diseases, so that smokers can benefit from clear, co-



DIRECTIVE OF European Parliament March 2001

LABELLING

"The use on tobacco product packaging of certain texts, such as "low-tar", "light", "ultralight", "mild", names, pictures and figurative or other signs, may mislead the consumer...prohibition of such use should be provided for..."

ADDITIVES

"...submit a list of all ingredients...accompanied by a statement setting out the reasons for inclusion...their function and category...toxicological data...in burnt or unburnt form...effects on health...any addictive effects...list shall be made public..."



LABELLING-WHY THE EUPHEMISMS?

1. IF WE DEFINE "LIGHT", WHY ALLOW ANYTHING HEAVIER?
2. "LIGHT" = "HIGHLY CARCINOGENIC"
"MILD" = "VERY HIGHLY CARCINOGENIC"
"REGULAR" = "POISON, DANGEROUS WHEN USED AS USUAL"
3. ~~THE EUROPEAN APPROACH IS BEST -~~

~~BAN DESCRIPTORS AS THEY CAN NEVER BE ACCURATE~~



Proposal for Regulating Cigarette emissions

Reason-serious diversity in toxin yields

Variation is threefold to twentyfold

Method (bi-annual)

- ~~Survey the market - "biologically active" compounds~~
- Establish median
- Median becomes the maximum in 12 months
- Brands which cannot comply removed from market



	Median	Minum	Maximum	Max/Min
Ammonia*	35.8	9.8	87.7	8.9
2-Aminonaphthalene	15.3	5.7	28.6	5.0
1-Aminonaphthalene	29.9	13.4	64.5	4.8
4-Aminobiphenyl	4.3	1.8	7.8	4.3
3-Aminobiphenyl	2.9	1.3	4.8	3.8
Benzo(a)pyrene (BAP)	22.2	5.6	41.5	7.5
Formaldehyde*	50.8	12.2	105.8	8.7
Acetaldehyde*	1618.3	596.2	2133.4	3.6
Acetone*	638.2	258.5	828.9	3.2
Acrolein*	166.5	51.2	223.4	4.4
Crotonaldehyde*	43.7	11.6	66.2	5.7
Propionaldehyde*	112.6	46.8	144.7	3.1
Methyl Ethyl Ketone*	173.0	72.5	230.2	3.2
Butyraldehyde*	72.7	28.8	95.6	3.3
Mercury	4.9	2.5	14.2	5.7
Lead	52.2	11.0	92.1	8.4
Cadmium	137.0	31.0	221.8	7.1
Arsenic	12.2	2.4	24.9	10.5
Nitrosomornicotine NNN	190.2	99.9	317.3	3.2
NNK	148.6	53.5	220.7	4.1
Nitrosoanatabine NAT	181.2	95.2	298.6	3.1
Nitrobasine (NAB)	26.3	14.2	45.3	3.2
Pyridine*	14.1	2.8	27.7	9.7
Quinoline*	0.9	0.3	2.7	8.4
HydroQuinone*	100.5	27.7	203.4	7.3
Catechol*	92.0	28.1	222.8	7.9
Phenol*	24.2	7.0	142.2	20.4
m+p-Cresol*	18.7	7.3	77.3	10.7
Butadiene*	75.6	23.6	122.5	5.2
Isoprene*	718.1	288.1	1192.8	4.1
Acrylonitrile*	23.3	7.8	39.1	5.0
Benzene*	77.6	28.0	105.9	3.8
Toluene*	124.7	48.3	173.7	3.6
Styrene yield*	11.8	4.5	19.3	4.3
*micrograms/cig. Otherwise nanograms/cig				

Median Yield by Brand

	Median	Brand X	Marlboro	Camel
NNK	148.6	54.2	158.6	220.7
Benzo(a)pyrene (BAP)	22.2	5.1	20.4	34.7
Lead	52.2	13.4	52.2	58.9
Arsenic	12.2	6.1	10.6	15.0
Ammonia	35.8	9.1	40.7	62.6

Massachusetts parameters, data



Summary

Of 34 compounds analysed...

Brand X was under the median 34 times

MARLBORO(K.L.T) was under the median 19 times

CAMEL(R.NF) was under the median 6 times

NB. Brand X is low nicotine-??greater compensation. This slide does not suggest brand X is less dangerous, merely that the industry CAN meet the standard



My Priority Compounds

	<u>Median*</u>	<u>Min.</u>	<u>Max</u>	<u>Variation</u>
Ammonia	35.8	9.8	87.7	x8.9
B A P	22.2	5.6	41.5	x7.5
Acetaldehyde	1618	596	2133	x3.6
Mercury	4.9	2.5	14.2	x5.7
Lead	52.2	11	92.1	x8.4
Arsenic	12.2	2.4	24.9	x10.5
N N K	148	53.5	220	x4.1
N N N	190	99.9	317	x3.2

**Current median would become the new maximum
Nicotine requires a special policy*

**WILL THIS POLICY MAKE THE CIGARETTE LESS
DANGEROUS??**

It should!!!! That's the idea....

**Basic principle - reduce dose of all toxins as much as possible
in ALL brands**

Was done with car exhausts

**However PROOF of benefit could only come from a long term
analysis of incidence/mortality and this would only be tentative**

It's the Precautionary Principle



CHEMICAL REGULATORY POLICY

- Set upper limits to emissions
- Remove (nearly) all additives (NB.Europe)
- Define nicotine policy

some possible outcomes

Fewer brands

progressively lower emissions

Nicotine less bioavailable



NICOTINE

•Remains the difficulty in ALL this. We MUST have better NRT's which give the same fix as a cigarette and are available everywhere.

• Need a better measure (mg/cig).

• ~~Need to reduce bioavailability (removing additives would help).~~

•Could then progressively reduce amount in cigarette

NB. Reducing other emissions would partially compensate for compensation



SAMPLE PACKET LABEL

Sample Cigarette	"light"	"median"	"heavy"
Ammonia	10.4 Mcg	35	87
Benzo(a)pyrene	5.6 mcg	22	41
Formaldehyde	12.2 Mcg	50	105
Acetaldehyde	786 Mcg	1618	2133
Acetone	326 Mcg	638	828
Acrolein	67 Mcg	166	223
Butyraldehyde	28.8 Mcg	72	95
H. Cyanide	442 Mcg	??	??
Mercury	3 Ng	4.9	14
Lead	12.1 Ng	52	92
Cadmium	33.5 Ng	137	221
Arsenic	7.7 Ng	12.2	24
N.N.Nicotine	99.9 Ng	190	317
NNK	55.2 Ng	148	220
Benzene	33.3 Ng	77	105
Carbon Monoxide	2.8 Mgm	??	??
Nicotine	0.1 Mgm	??	??



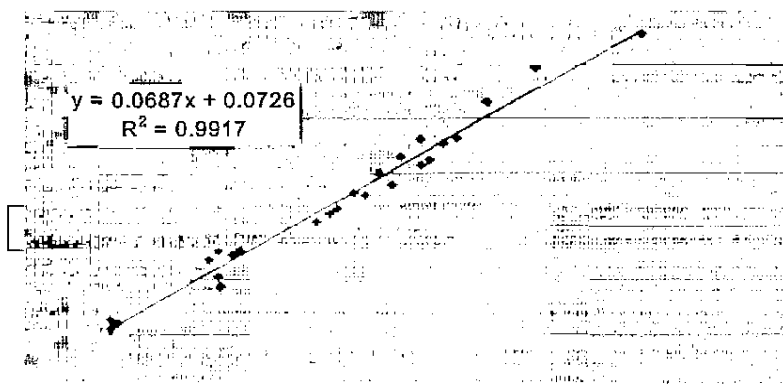
Mainstream Smoke Summary

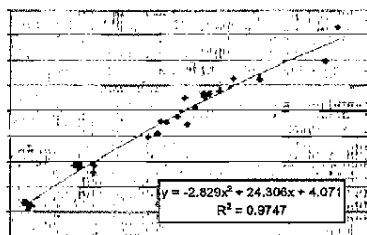
TOBACCO INDUSTRY DATA

- **Functional Relationships Existed Between these Mainstream Smoke Constituents and Either FTC or Massachusetts Parameters**
 - Vapor Phase Constituents Correlated with Carbon Monoxide
 - Particulate Phase Constituents Correlated with either nicotine or "Tar"
- **Both FTC and Massachusetts Parameters Provided Approximately the Same Correlation**

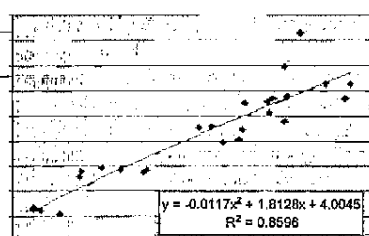
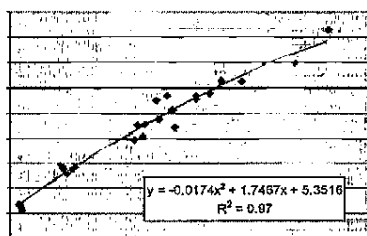


Comparison of Massachusetts Nicotine and "Tar" Yields
Tobacco industry data

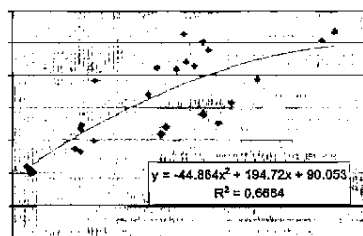




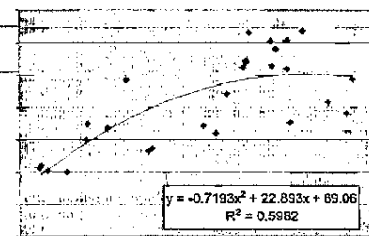
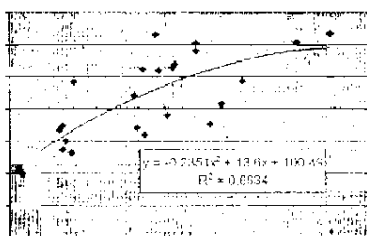
1999 Massachusetts Benchmark Study
(tobacco industry data)
Mainstream Smoke Results - Relationship Observed Between "Massachusetts" Benzo[a]pyrene Delivery and FTC Nicotine, Carbon Monoxide and "Tar"



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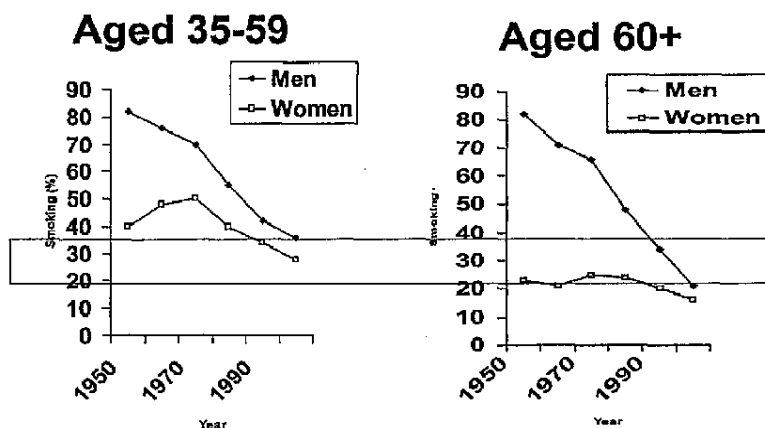


1999 Massachusetts Benchmark Study
(tobacco industry data)
Mainstream Smoke Results - Relationship Observed Between "Massachusetts" NNN Delivery and FTC Nicotine, Carbon Monoxide and "Tar"



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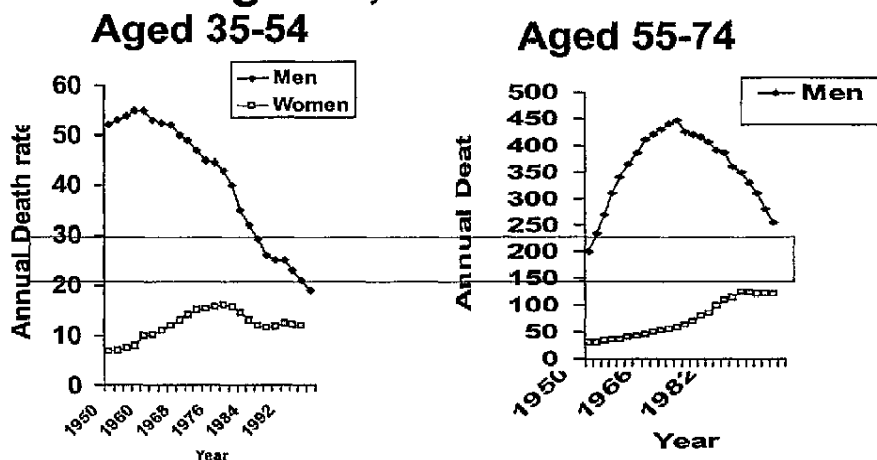
Prevalence of Smoking in United Kingdom, 1950-1998



Data abstracted from Peto et al, BMJ, August 2000



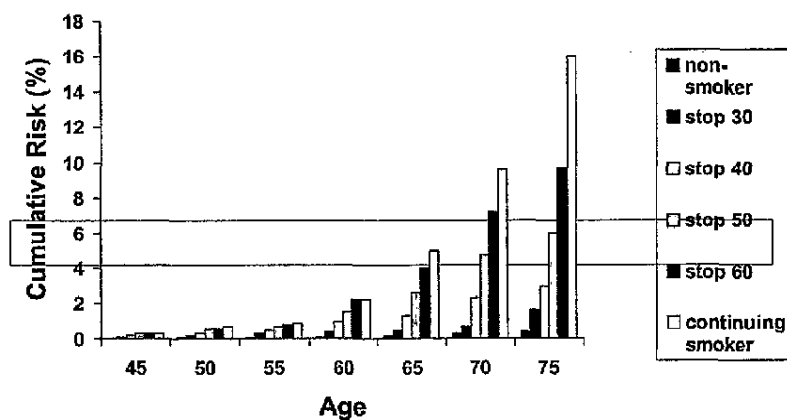
Mortality from Lung Cancer in United Kingdom, 1950-1996



Data abstracted from Peto et al, BMJ, August 2000



Cumulative Risk of Lung Cancer in Men in United Kingdom according to Quit status.



Data abstracted from Peto et al, BMJ, August 2000

